

**DETECTION OF MULTIPLE WATERMARKS AND IMPROVED  
WATERMARK CALIBRATION SIGNALS**

Abstract of the Disclosure

5       Steganographic calibration signals (sometimes termed “orientation signals,” “marker signals,” reference signals,” “grid signals,” etc.) are sometimes included with digital watermarking signals so that subsequent distortion of the object thereby marked (e.g., a digital image file, audio clip, document, etc.) can later be discerned and compensated-for. Digital watermark detection systems sometimes fail if the object  
10      encompasses several separately-watermarked components (e.g., a scanned magazine page with several different images, or photocopy data resulting from scanning while several documents are on the photocopier platen). Each component may include its own calibration signal, confusing the detection system. In accordance with certain embodiments, this problem is addressed by a proximity-based approach, and/or a  
15      multiple grid-based approach. In accordance with other embodiments, the calibration signal can – itself – convey watermark information, so it serves both a calibration and a payload-conveyance function.

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